

REMARKS

Claims 1-2 and 5-68 are pending in the present application. Claims 1-2 and 5-68 have been examined and are rejected. In the above amendments, claims 1, 5, 6, 28-32, 39, 40, 44, 45, 54, 56, 59, 61, 63, 67 and 68 have been amended. Therefore, after entry of the above amendments, claims 1-2 and 5-68 will be pending in this application. Applicant believes that the present application is now in condition for allowance, which prompt and favorable action is respectfully requested.

Rejection of Claims 1 and 2 Under 35 U.S.C. §103(a)

Claims 1 and 2 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen *et al* (U.S. Patent No. 6,687,499) in view of Walding (U.S. Patent No. 6,031,845).

Claim 1 of the present application, as amended, recites:

“A method for testing a plurality of channels associated with a forward link in a wireless data communication system, comprising:

receiving a first message having included therein test settings selected from among a plurality of possible test settings for one or more channels comprising a reverse traffic channel, one or more auxiliary channels, or a combination thereof;

configuring the one or more channels based on the selected test settings in the first message;

receiving test packets via a forward traffic channel;

transmitting loop back packets via the reverse traffic channel if indicated by the selected test settings, wherein the loop back packets comprise data for the received test packets; and

transmitting signaling data via the one or more auxiliary channels if indicated by the selected test settings to test the one or more auxiliary channels.”

Applicant submits that claim 1 is patentable over Numminen in view of Walding for at least the following reasons.

First, the combination of Numminen and Walding does not disclose “receiving a first message having included therein test settings selected from among a plurality of possible test settings for one or more channels,” as recited in claim 1. The rejection indicates that this feature is disclosed by Numminen in column 7, lines 18-20. This section states “so test mode

means that the mobile station to be tested is instructed to maintain a connection on a certain transmission channel.” This section does not mention test settings or selection of test settings from among a plurality of possible test settings. Rather, Numminen states “as testing … is begun, an arrangement according to FIG. 2 is first set up in which the mobile station to be tested is connected in a known manner to the test equipment and test SIM.” (See column 6, lines 45-48.) Thus, the cited section of Numminen does not describe this feature of claim 1.

Second, the combination of Numminen and Walding does not disclose “configuring the one or more channels based on the selected test settings,” as recited in claim 1. The rejection indicates that this feature is disclosed by Numminen in column 7, lines 46-47, column 7, lines 59-61, and column 9, lines 10-11. Column 7, lines 46-47 state “at first the test equipment sends a comparison and statistical operation start command associated with the data channel.” Column 7, lines 59-61 and column 9, lines 10-11 state “the mobile station closes, i.e. activates, the test loop in a certain time after it has sent the acknowledge.” These sections describe sending a start command and activating the test loop. These sections do not describe configuring one or more channels based on selected test settings, as recited in claim 1.

Third, the combination of Numminen and Walding does not disclose “transmitting loop back packets via the reverse traffic channel if indicated by the selected test settings,” as recited in claim 1. The rejection indicates that this feature is disclosed by Numminen in column 7, lines 49-51. This section states “the close command may include an identifier on the basis of which the mobile station identifies the G loop.” In Numminen, the G loop tests the downlink prior to channel decoding (see column 8, lines 34-35 and FIG. 3) whereas the H loop tests the downlink after channel decoding (see column 8, lines 62-66 and FIG. 3). The cited section thus states that the close command may indicate whether to perform testing prior to the channel decoding. This section does not disclose transmitting loop back packets if indicated by the selected test settings, as recited in claim 1.

Fourth, the combination of Numminen and Walding does not disclose “transmitting signaling data via the one or more auxiliary channels if indicated by the selected test settings to test the one or more auxiliary channels,” as recited in claim 1. The rejection states that “Numminen does not explicitly teach signaling data is sent via auxiliary channel” but that “Walding … teaches the overhead channel … is provided for carrying control information … used to establish and maintain the downlink and uplink communication paths (column 1, lines

48-50)." Walding discloses the use of the overhead channel for regular communication. However, neither Numminen nor Walding disclose "transmitting signaling data ... to test the one or more auxiliary channels," as recited in claim 1.

For at least the above reasons, Applicant submits that claim 1 is patentable over Numminen in view of Walding. Claim 2 is dependent on claim 1 and is patentable for at least the reasons noted for claim 1.

Accordingly, the §103(a) rejection of claims 1 and 2 should be withdrawn.

Rejection of Claims 6-8 and 10 Under 35 U.S.C. §103(a)

Claims 6-8 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann *et al* (U.S. Patent No. 5,802,105).

Claim 6 of the present application, as amended, recites:

"A method for testing one or more channels in a wireless data communication system, comprising:

receiving a first data transmission comprising test packets of known test data via a first channel;

identifying parameter values descriptive of the test packets in the first data transmission and excluding known test data, wherein the parameter values for each test packet comprise at least one of a serving sector from which the test packet was received, a sequence number of the test packet, and a length of the test packet;

forming a second data transmission with the identified parameter values for the received test packets; and

transmitting the second data transmission via a second channel."

Applicant submits that claim 6 is patentable over Numminen in view of Tiedemann for at least the following reasons.

First, the combination of Numminen and Tiedemann does not disclose "identifying parameter values descriptive of the test packets in the first data transmission and excluding known test data," as recited in claim 6. The rejection indicates that this feature is disclosed by Numminen in column 1, lines 35-39. This section describes a conventional loop back test mode in which a mobile station sends back known bits, e.g., the same bits that are received on the downlink. This section does not describe "identifying parameter values descriptive of

the test packets.” To more clearly distinguish claim 6, this claim has been amended to recite the parameter values exclude known test data. Thus, the cited section of Numminen does not describe this feature of claim 6.

Second, the combination of Numminen and Tiedemann does not disclose “wherein the parameter values for each test packet comprise at least one of a serving sector from which the test packet was received, a sequence number of the test packet, and a length of the test packet,” as recited in claim 6. The rejection indicates that this feature is disclosed by Tiedemann in column 6, lines 13-15. This section states “each packet of test data ... comprises a pseudorandom bit sequence of a predetermined length.” Applicant submits that the pseudorandom bit sequence of Tiedemann is not equivalent to the sequence number recited in claim 6. The sequence number may be used to keep track of individual test packets whereas the pseudorandom bit sequence may be used as known test data for the test packets. Thus, the cited section of Tiedemann does not describe this feature of claim 6.

For at least the above reasons, Applicant submits that claim 6 is patentable over Numminen in view of Tiedemann. Claims 7, 8 and 10 are dependent on claim 6 and are patentable for at least the reasons noted for claim 6.

Accordingly, the §103(a) rejection of claims 6-8 and 10 should be withdrawn.

Rejection of Claims 29, 39, 61-63, 67 and 68 Under 35 U.S.C. §103(a)

Claims 29, 39, 61-63, 67 and 68 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Kobayasi *et al.* (U.S. Patent No. 6,333,932).

Claim 29 of the present application, as amended, recites:

“A method for testing one or more channels in a wireless data communication system, comprising:

receiving a plurality of test packets of known test data via a forward traffic channel;

identifying a transmission source and a sequence number of each received test packet;

forming a plurality of loop back packets for the plurality of received test packets, wherein each loop back packet covers zero or more test packets, excludes known test data, and includes the transmission source and the sequence number of each covered test packet; and

transmitting the loop back packets via a reverse traffic channel.”

Applicant submits that claim 29 is patentable over Numminen in view of Kobayasi for at least the following reasons.

First, there is no motivation or suggestion to combine Numminen and Kobayasi. Numminen describes testing of a mobile station in a wireless communication system whereas Kobayasi describes testing of a wireline high speed local area network (LAN). (See column 1, lines 14-20 of Kobayasi.) These wireless and wireline networks have different characteristics and capabilities.

The rejection states that “it would have been obvious ... to modify Numminen’s teaching by incorporating the loopback test scheme as taught by Kobayasi.” If Kobayasi teaches loopback testing as indicated by the rejection, then Kobayasi teaches away from Numminen. In Numminen, a mobile station collects statistics and sends the collected statistics (instead of the received test data) back to the test equipment. Numminen hence avoids loopback testing, which is shown by arrow **104** in FIG. 1 and labeled as prior art by Numminen. This is a further reason against combining Numminen and Kobayasi.

Second, the combination of Numminen and Kobayasi does not disclose “forming a plurality of loop back packets ..., wherein each loop back packet ... excludes known test data,” as recited in claim 29. Kobayasi states “on receipt of the test packet, terminal SW station **6** outputs the packet with its DA and SA inverted. That is, the packet is returned from terminal SW station **6** to SW station **3**.” (See column 2, line 65 to column 3, line 1.) SW station **6** thus sends back the same packet that it receives. In contrast, claim 29 recites each loop back packet excludes known test data.

For at least the above reasons, Applicant submits that claim 29 is patentable over Numminen in view of Kobayasi.

Independent claims 39, 61, 63, 67 and 68 have each been amended to recite features similar to those noted above for claim 29. Claim 62 is dependent on claim 61. Claims 39, 61-63, 67 and 68 are thus patentable over Numminen in view of Kobayasi for at least the reasons noted for claim 29.

Accordingly, the §103(a) rejection of claims 29, 39, 61-63, 67 and 68 should be withdrawn.

Rejection of Claim 30 Under 35 U.S.C. §103(a)

Claim 30 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann.

Claim 30 of the present application, as amended, recites:

“A method for testing one or more channels in a wireless data communication system, comprising:

sending a first data transmission via a first channel, wherein the first data transmission comprises test packets of known test data;

receiving a second data transmission via a second channel, wherein the second data transmission includes parameter values descriptive of the test packets in the first data transmission, excludes known test data, and further comprises a record for each test packet correctly received;

updating a plurality of variables based on the parameter values included in the second data transmission; and

determining a packet error rate based on information included in the second data transmission.”

Applicant submits that claim 30 is patentable over Numminen in view of Tiedemann for at least the following reasons.

First, the combination of Numminen and Tiedemann does not disclose “the second data transmission includes parameter values descriptive of the test packets in the first data transmission, excludes known test data,” as recited in claim 30. The cited section of Numminen, column 1, lines 37-39, describes a mobile station receiving a downlink frame and sending a corresponding uplink frame of known bits, e.g., the same bits received by the mobile station in the downlink frame.

Second, the combination of Numminen and Tiedemann does not disclose “the second data transmission . . . comprises a record for each test packet correctly received,” as recited in claim 30. Rather, Numminen states “complete statistics or information elements representing the reception error rate status in general are sent uplink to the test equipment.” (Column 8, lines 36-38.)

For at least the above reasons, Applicant submits that claim 30 is patentable over Numminen in view of Tiedemann.

Accordingly, the §103(a) rejection of claim 30 should be withdrawn.

Rejection of Claims 32-38 Under 35 U.S.C. §103(a)

Claims 32-38 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Walding.

Claim 32 of the present application, as amended, recites:

“A method for testing forward link for specific configuration of one or more auxiliary channels in a wireless data communication system, comprising:

receiving a first message having included therein test settings selected from among a plurality of possible test settings for one or more auxiliary channels used to carry signaling for data transmission on the forward link;

configuring each auxiliary channel based on test settings applicable to the auxiliary channel; and

transmitting each configured auxiliary channel on reverse link in accordance with the applicable test settings to test the auxiliary channel.”

Applicant submits that claim 32 is patentable over Numminen in view of Walding for at least the following reasons.

First, the combination of Numminen and Walding does not disclose “receiving a first message having included therein test settings selected from among a plurality of possible test settings for one or more auxiliary channels,” as recited in claim 32. The rejection indicates that this feature is disclosed by Numminen in column 6, lines 54-56 and column 6, line 66 to column 7, line 8. Column 6, lines 54-56 states “the test equipment sends an immediate assignment **503** which may include various instructions for the mobile station.” However, this section does not mention what these various instructions are for, or whether they are for test settings for auxiliary channels. Column 6, line 66 to column 7, line 8 describes sending an immediate assignment message to turn on/off the test mode at the mobile station. These sections of Numminen do not describe this feature of claim 32.

Second, the combination of Numminen and Walding does not disclose “configuring each auxiliary channel based on test settings applicable to the auxiliary channel,” as recited in claim 32. The rejection indicates that this feature is disclosed by Numminen in column 7, lines 46-50. This section states “at first the test equipment sends a comparison and statistical

operation start command associated with the data channel, which command can be called CLOSE_Multi-slot_loop_CMD. The close command may include an identifier on the basis of which the mobile station identifies the G loop.” This section thus describes sending a command to start testing and indicating whether to perform testing via the G loop, which is prior to channel decoding. This section does not describe configuring each auxiliary channel based on test settings.

Third, the combination of Numminen and Walding does not disclose “transmitting each configured auxiliary channel on reverse link in accordance with the applicable test settings to test the configured auxiliary channel,” as recited in claim 32. As discussed above for claim 1, neither Numminen nor Walding disclose transmitting each configured auxiliary channel to test the auxiliary channel.

For at least the above reasons, Applicant submits that claim 32 is patentable over Numminen in view of Walding. Claims 33-38 are dependent on claim 32 and are patentable for at least the reasons noted for claim 32.

Accordingly, the §103(a) rejection of claims 32-38 should be withdrawn.

Rejection of Claims 40-44 Under 35 U.S.C. §103(a)

Claims 40-44 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Oommen *et al.* (U.S. Patent No. 6,799,203).

Claim 40 of the present application, as amended, recites:

“A method for testing a link in a wireless data communication system, comprising:

collecting a first statistic for a first parameter while in an idle state and not exchanging data via the link;

collecting a second statistic for a second parameter different from the first parameter while in a connected state and exchanging data via the link, wherein at least the first statistic or the second statistic facilitates determination of a packet error rate;

receiving a first message requesting the first or second statistic; and sending a second message with the requested first or second statistic.”

Applicant submits that claim 40 is patentable over Numminen in view of Oommen for at least the following reasons.

First, the combination of Numminen and Oommen does not disclose “collecting a first statistic for a first parameter while in an idle state and not exchanging data via the link,” as recited in claim 40. The rejection indicates that this feature is disclosed by Numminen in column 10, lines 1-8. This section states “the testing described above the invention is applicable when a mobile station or a terminal of a cellular radio system in general is in normal use, i.e. moving with its user within the area of the cellular radio system. Then it is for most of the time in the so-called idle mode in which it receives from base stations certain downlink messages and sends occasionally location update messages uplink. The cellular radio system knows at all times the location of every idling mobile station with the accuracy of a so-called location area (LA) at least.” To perform testing in Numminen, the test equipment sends test data to a mobile station, and the mobile station receives the test data and collects statistics for the received test data. Presumably, the mobile station would need to go from an idle mode to an active mode in order to receive the test data and send the collected statistics. Numminen describes updating the location of the mobile station in the idle mode but does not describe performing testing in the idle state.

Second, the combination of Numminen and Oommen does not disclose “collecting a second statistic for a second parameter different from the first parameter while in a connected state,” as recited in claim 40. Numminen and Oommen do not describe collecting statistics for different parameters in the idle and connected states, as recited in claim 40.

For at least the above reasons, Applicant submits that claim 40 is patentable over Numminen in view of Oommen. Claims 41-43 are dependent on claim 40 and are patentable for at least the reasons noted for claim 40.

Independent claim 44 recites features similar to those noted above for claim 40. Claim 44 is thus patentable over Numminen in view of Oommen for at least the reason noted for claim 40.

Accordingly, the §103(a) rejection of claims 40-44 should be withdrawn.

Rejection of Claims 45, 56, 59 and 60 Under 35 U.S.C. §103(a)

Claims 45 and 56 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann.

Claims 59 and 60 also stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann.

Claim 45 of the present application recites:

“A method for testing a traffic channel in a wireless data communication system, comprising:

receiving a first message having included therein test settings for the traffic channel;

forming a plurality of test packets for transmission on the traffic channel, the plurality of test packets comprising information for a plurality of rates being tested for the traffic channel;

selecting rates for the test packets based on a rate selection scheme in which the selected rates are varied in accordance with a set of rules for the rate selection scheme; and

transmitting the test packets at the selected rates on the traffic channel.”

Applicant submits that claim 45 is patentable over Numminen in view of Tiedemann for at least the following reason.

The combination of Numminen and Tiedemann does not disclose “forming a plurality of test packets for transmission on the traffic channel, the plurality of test packets comprising information for a plurality of rates being tested for the traffic channel,” as recited in claim 45. In Tiedemann, the test packets contain pseudo-random bits. (See column 6, lines 13-15.)

For at least the above reason, Applicant submits that claim 45 is patentable over Numminen in view of Tiedemann.

Independent claims 56 and 59 each recite the feature noted above for claim 45.

Claims 56 and 59 are thus patentable over Numminen in view of Tiedemann for at least the reason noted for claim 45. Claim 60 is dependent on claim 59 and is patentable for at least the reason noted for claim 59.

Accordingly, the §103(a) rejection of claims 45, 56, 59 and 60 should be withdrawn.

Rejection of Remaining Claims Under 35 U.S.C. §103(a)

Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Walding and Funk (U.S. Patent No. 6,766,164).

Independent claim 5 has been amended to recite the features noted above for claim 1. Claim 5 is patentable over Numminen in view of Walding and Funk for at least the reasons noted for claim 1.

Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann and Funk.

Claims 11-13, 15-20, 22-23 and 25-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann and Kobayasi.

Claims 14 and 21 also stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann and Kobayashi.

Claim 24 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann and Buchholz (U.S. Patent No. 5,555,266).

Claims 9 and 11-27 are dependent on claim 6. The combination of Numminen and Tiedemann does not disclose all of the elements of base claim 6, as discussed above. Hence, the combination of Numminen and Tiedemann is an insufficient basis for the §103(a) rejection of dependent claims 9 and 11-27. The other references do not address the deficiencies of Numminen and Tiedemann.

Claim 28 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann.

Independent claim 28 has been amended to recite the features noted above for claim 6. Claim 28 is patentable over Numminen in view of Tiedemann for at least the reasons noted for claim 6.

Claim 31 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Kobayashi and Tiedemann.

Independent claim 31 has been amended to recite the features noted above for claim 29. Claim 31 is patentable over Numminen in view of Kobayashi and Tiedemann for at least the reasons noted for claim 29.

Claim 34 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Walding and Gopalakrishnan (U.S. Patent No. 7,110,466).

Claim 34 is dependent on claim 32. The combination of Numminen and Walding does not disclose all of the elements of base claim 32, as discussed above. Hence, the combination of Numminen and Walding is an insufficient basis for the §103(a) rejection of dependent claim 34. The other reference does not address the deficiencies of Numminen and Walding.

Claims 46-48 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann and Ikeda *et al.* (U.S. Patent No. 5,636,212).

Claims 49-55 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann and Kobayasi.

Claims 46-55 are dependent on claim 45. The combination of Numminen and Tiedemann does not disclose all of the elements of base claim 45, as discussed above. Hence, the combination of Numminen and Tiedemann is an insufficient basis for the §103(a) rejection of dependent claims 46-55. The other references do not address the deficiencies of Numminen and Tiedemann.

Claims 57, 58 and 64-66 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Numminen in view of Tiedemann, Kobayasi and Ikeda.

Independent claims 57, 64 and 66 each recite “wherein each test packet includes a sequence number of a test packet last transmitted at each of a plurality of possible rates.” Numminen, Kobayasi and Ikeda do not disclose this feature of claim 57. Claim 58 is dependent on claim 57, and claim 65 is dependent on claim 64. Claims 57, 58 and 64-66 are patentable over Numminen in view of Kobayasi and Ikeda for at least the reason noted above.

Accordingly, the §103(a) rejection of claims 5, 9, 11-28, 31, 34, 46-55, 57, 58 and 64-66 should be withdrawn.

CONCLUSION

In light of the amendments contained herein, Applicant submits that the application is in condition for allowance, for which early action is requested.

Applicant simultaneously files with this Response to Final Office Action a Request for Continued Examination.

Please charge any fees associated with this communication or overpayments that may be due with this Response to Deposit Account No. 17-0026.

Respectfully submitted,

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